



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,253	06/09/2005	Matthias Franz	10191/3759	7516
26646	7590	01/07/2008		
KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004			EXAMINER RASHID, DAVID	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 01/07/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/501,253	Applicant(s) FRANZ, MATTHIAS	
	Examiner David P. Rashid	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-17, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-17, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 November 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2624

DETAILED ACTION

All of the examiner's suggestions presented herein below have been assumed for examination purposes, unless otherwise noted.

Amendments

1. This office action is responsive to the claim and specification amendment received on 11/8/2007. **Claims 11-17 and 19-20** remain pending; **claim 18** cancelled.

Specification

2. In response to applicant's specification amendments and remarks received on 11/8/2007, the previous specification objections are withdrawn.

Drawings

3. The replacement drawings were received on 11/8/2007 and are acceptable. In response to applicant's drawing amendments and remarks, the previous drawing objections are withdrawn.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Section IV.C, reads as follows:

Art Unit: 2624

While abstract ideas, natural phenomena, and laws of nature are not eligible for patenting, methods and products employing abstract ideas, natural phenomena, and laws of nature to perform a real-world function may well be. In evaluating whether a claim meets the requirements of section 101, the claim must be considered as a whole to determine whether it is for a particular application of an abstract idea, natural phenomenon, or law of nature, rather than for the abstract idea, natural phenomenon, or law of nature itself.

For claims including such excluded subject matter to be eligible, the claim must be for a practical application of the abstract idea, law of nature, or natural phenomenon. Diehr, 450 U.S. at 187, 209 USPQ at 8 ("application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection."); Benson, 409 U.S. at 71, 175 USPQ at 676 (rejecting formula claim because it "has no substantial practical application").

To satisfy section 101 requirements, the claim must be for a practical application of the Sec. 101 judicial exception, which can be identified in various ways:

The claimed invention "transforms" an article or physical object to a different state or thing.

The claimed invention otherwise produces a useful, concrete and tangible result, based on the factors discussed below.

6. **Claims 11-17 and 19-20** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 11-17 and 19-20 recites the mere manipulation of data or an abstract idea, or merely solves a mathematical problem without a limitation to a practical application. A practical application exists if the result of the claimed invention is "useful, concrete and tangible" (with the emphasis on "result")(Guidelines, section IV.C.2.b). A "useful" result is one that satisfies the utility requirement of section 101, a "concrete" result is one that is "repeatable" or "predictable", and a "tangible" result is one that is "real", or "real-world", as opposed to "abstract" (Guidelines, section IV.C.2.b)). Claims 11-17 and 19-20 merely manipulates data without ever producing a useful, concrete and tangible result.

Claims 11-17 and 19-20 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter because the claimed invention is directed to a judicial exception and is not directed to a practical application of such judicial exception (though the claims produce what is considered a useful and concrete result, the claims do not require any physical transformation and the invention does not produce a tangible result).

MPEP SECTION 2106 (IV)(C)(2)(b)(2) titled "TANGIBLE RESULT" reads as follows:

Art Unit: 2624

...the tangible requirement does require that the claim must recite more than a 35 U.S.C. 101 judicial exception, in that the process claim must set forth a practical application of that judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77 (invention ineligible because had “no substantial practical application.”).

and MPEP SECTION 2106 (II)(C) reads as follows:

As a general matter, the grammar and intended meaning of terms used in a claim will dictate whether the language limits the claim scope. Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. The following are examples of language that may raise a question as to the limiting effect of the language in a claim:

- (A) statements of intended use or field of use,
- (B) “adapted to” or “adapted for” clauses,
- (C) “wherein” clauses, or
- (D) “whereby” clauses.

For example, the method of independent claim 1 is directed to the actions of “analyzing an image” and “producing a signal” which could all be done on a hardware implementation free from any “real-world result” as there could be no real-world application. The analyzing step of claim 1 only requires an image that may already be stored within a computer, an image that was recorded by an image sensor (thus inducing tangibility and physicality), but the recording itself by the image sensor is not positively recited (and so the method step remains intangible).

In order to for the claimed product to produce a “useful, concrete and tangible” result, recitation of one or more of the following elements is suggested:

- The manipulation of data that represents a physical object or activity transformed from outside the computer.
- A physical transformations outside the computer, for example in the form of pre or post computer processing activity.
- A direct recitation of a practical application;

Art Unit: 2624

Applicant is also advised to provide a written explanation of how and why the claimed invention (either as currently recited or as amended) produces a useful, concrete and tangible result.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. **Claims 11-17 and 19-20** are rejected under 35 U.S.C. 102(b) as being anticipated by Stam et al. (US 5,923,027 A).

Regarding **claim 11**, Stam discloses a method for recognizing a visual obstruction “moisture on a surface” in Col. 1, lines 8 – 12) using an image sensor (FIG. 1) associated with a vehicle (“vehicle’s windshield” in Col. 1, lines 8 – 12), comprising:

analyzing an image (FIG. 5, element 46) recorded by an image sensor, wherein the image sensor is focused on a region external to the vehicle (the image sensor is “focused” on anything within its view, including the external region to the vehicle), wherein at least one of a presence and a type of a visual obstruction (the presence of moisture/fog on the windshield; “Result” column in Table in Col. 11, lines 19 – 25) is determined by the analysis of the image (FIG. 5; FIG. 6), wherein the analysis

Art Unit: 2624

includes measuring a blurriness (FIG. 5, elements, 48, 50, 52, 58, 64) of at least a portion of the image (a “portion” of the image is both taken in elements 46, 56 in FIG. 5);

producing a signal (“YES” and “NO” from element 52 in FIG. 5) which indicates one of the presence and the type of the visual obstruction (the presence of moisture/fog on the windshield; “Result” column in Table in Col. 11, lines 19 – 25).

Regarding **claim 12**, Stam discloses the method of claim 11, wherein the at least one of the presence and the type of the visual obstruction (the presence of moisture/fog on the windshield; “Result” column in Table in Col. 11, lines 19 – 25) is determined by measuring a relative blurriness of different parts (“EACH PIXEL” in element 48 of FIG. 5) of the image (FIG. 5, element 46).

Regarding **claim 13**, Stam discloses the method of claim 11, wherein the blurriness is measured based on one of a contrast spectrum of the image, a Fourier spectrum (“LAPLACIAN” in element 48 of FIG. 5; equation (1) being the Fourier also used), and a autocorrelation function of the image.

Regarding **claim 14**, Stam discloses the method of claims 11, wherein the at least one of the presence and the type of visual obstruction (the presence of moisture/fog on the windshield; “Result” column in Table in Col. 11, lines 19 – 25) is determined based on a measured distribution (“SUM THE RESULTS” in element 48 of FIG. 5) of the blurriness by comparison (FIG. 5, elements 50, 52) with reference distributions (“ZERO CALIBRATION” in element 50 of FIG. 5).

Regarding **claim 15**, Stam discloses the method of claim 11, wherein an analysis of at least one image recorded (FIG. 5, element 56) after an initial wiping operation (FIG. 5, element 54) on a windshield of a motor vehicle (“vehicle’s windshield” in Col. 1, lines 8 – 12) is used to determine

Art Unit: 2624

whether to initiate a next wiping operation (“STORE AS CALIBRATION” in element 64 of FIG. 5 to be used again to actuate wipers in the future in element 54 of FIG. 5).

Regarding **claim 16**, Stam discloses the method of claim 15, wherein the determination regarding the next wiping operation (next wiping operation after initial loop from element 46 to 64 in FIG. 5 already occurred to produce new calibration data from element 64 in FIG. 5) is based on blurriness of a first image (“ACQUIRE IMAGE” in element 64 of FIG. 5 and creating the calibration data from it to be later used) that was recorded immediately after the initial wiping operation (FIG. 5, element 54) in comparison to blurriness of an image recorded subsequent (second loop from element 46 to 64 is now based off of new calibration (from element 64 of first loop) in elements 50, 52) to the first image .

Regarding **claim 17**, Stam discloses the method of claim 11, further comprising:

turning on a windshield light if a scene has a contrast below a predetermined threshold (Col. 9, lines 56 – 67 wherein the contrast is “dark conditions” as opposed to normal).

Regarding **claim 18**, Stam discloses the method of claim 11, wherein the image sensor (FIG. 2) is focused on a region external (FIG. 3, element 70; “Exterior Fog” in “Result” column in Table in Col. 11, lines 19 – 25) to the vehicle.

Regarding **claim 19**, claim 11 recites identical features as in claim 19. Thus, references/arguments equivalent to those presented above for claim 11 are equally applicable to claim 19.

Regarding **claim 20**, Stam discloses the device of claim 19, wherein the signal (“YES” signal from element 52 of FIG. 5) is used to control at least one of windshield wipers (FIG. 5, element 54), windshield heating systems, and windshield washer systems.

Response to Amendment

9. Applicant's arguments filed on 11/8/2007 with respect to independent **claims 11 and 19** have been respectfully and fully considered, they are not found persuasive.

Summary of Remarks regarding claims 11 and 19:

Applicant argues claim 11, as presented, relates to a method for recognizing a visual obstruction using an image sensor associated with a vehicle, including analyzing an image recorded by an image sensor, *in which the image sensor is focused on a region external to the vehicle*. Claim 19, as presented, relates to a device for identifying a visual obstruction, including an image sensor for recording an image, *in which the image sensor is focused on a region external to the vehicle* (@ response page 7).

The Stam reference does not identically disclose (or even suggest) feature in which the image sensor is focused on a region external to the vehicle, as provided for in the context of claims 11 and 19, as presented. Instead, the Stam reference indicates that its image sensor is focused on the windshield of a vehicle. Specifically, the Stam reference states that the "automatic moisture detecting system includes an optical system for imaging a portion of the windshield onto an image array sensor." (Stam, col. 2, lines 63 to 65). Further, the Stam reference states that the optical system "causes raindrops and other sources of moisture on the windshield to be sharply focused while distant objects beyond the windshield are severely blurred in the image." (Stam, col. 3, lines 62 to 64). (See also Stam, col. 4, lines 62 to 66 (stating that the optical system images "a predetermined portion of the windshield onto an image sensor such that objects at the approximate distance of the windshield are sharply in focus at the image plane while objects at a longer distance are out of focus and blurred"); and col. 8, lines 27 to 29 (stating that the optical system "images the scene in such a way that distant

Art Unit: 2624

objects are out of focus and objects at the windshield distance are in focus")). Thus, it is plainly apparent that the Stam reference merely refers to focusing the image sensor on the windshield of a vehicle. Therefore, the Stam reference does not identically disclose (or even suggest) the feature in which the image sensor is focused on a region external to the vehicle, as provided for in the context of claims 11 and 19, as presented (*@ response pages 7-8*).

Examiner's Response regarding claims 11 and 19:

However, the Examiner contends that the added limitation of "wherein the image sensor is focused on a region external to the vehicle" is broad enough to cover when the line-of-sight of the image sensor is portraying a region external to the vehicle. The line-of-sight of the image sensor is "focused" on any particular area of which it images since the image sensor could be rotated within three-dimensionally and cover any other particular line-of-sight (since it is definitely not covering every possible and conceivable three-dimensional plane at one time).

The image sensor imaging the windshield area (FIG. 1, FIG. 3) alone is enough to anticipate the limitation of focusing on a region external to the vehicle. The Applicant's reasoning could be interpreted as contradictory when stating both that Stam (i) does not focus its image sensor on a region external to the vehicle and (ii) does focus on the windshield of the vehicle. Though there are many parts of a vehicle from which there is no "external exposure" from the vehicle itself, one of ordinary skill in the art can easily deduce that part of a windshield is external to a vehicle (elements 26, 70 of FIG. 3 of Stam for example).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 6097024 A; US 6262410 B1.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David P. Rashid whose telephone number is (571) 270-1578. The examiner can normally be reached Monday - Friday 8:30 - 17:00 ET.

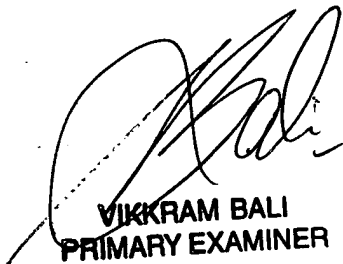
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 2624

applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Rashid/
Examiner, Art Unit 2624



VIKKRAM BALI
PRIMARY EXAMINER

David P Rashid
Examiner
Art Unit 2624